

**Oregon Plan for Salmon and Watersheds
Oregon Coastal Coho Assessment
Water Quality Report
Prepared by Department of Environmental Quality**

The Department of Environmental Quality (DEQ) has the responsibility under the Oregon Plan for Salmon and Watersheds and through State statute to protect and restore water quality in Oregon and to monitor water quality throughout the state.

Some activities of other agencies and groups are also related to water quality protection and assessment. Where appropriate these will be described or referenced.

Section A – Implementation of Conservation Activities

1. The conservation effort, the party(ies) to the agreement or plan that will implement the effort, and the staffing, funding level, funding source, and other resources necessary to implement the effort are identified.

The DEQ's role under the Oregon Plan for Salmon and Watersheds involves both protection and restoration of water quality. To do this DEQ:

- ❑ Coordinates with other agencies to monitor water quality throughout the state and conduct intensive monitoring studies.
- ❑ Establishes water quality standards that are protective of salmonids.
- ❑ Regulates point source discharges from industries and sewage treatment plants, and storm water runoff from urban areas and construction sites, by establishing pollutant limits in wastewater permits or requiring stormwater management plans to ensure water quality standards are met. This includes permitting, monitoring, compliance assistance, technical assistance, and enforcement when necessary.
- ❑ Coordinates comprehensive nonpoint source pollution prevention programs under federal Clean Water Act.
- ❑ Develops Total Maximum Daily Loads (TMDLs) to bring water bodies into compliance with state standards. Oversees and monitors TMDL implementation activities to ensure water quality improvements are achieved.
- ❑ Provides technical and financial assistance to watershed councils, municipalities, industries, government agencies and others in support of water quality improvement efforts.

Program Resources for 2003-2005 Biennium

The following describes the funding level (limitation authority in the 2003-2005 Legislatively Approved Budget), funding source and staffing level for DEQ's *statewide* water quality program. It was not possible to accurately determine the amount spent solely in the ESU.

DEQ's 2003-2005 Budget for Water Quality*

General Fund	\$11,464,134
Lottery Fund	\$3,286,418
Other Funds (fees)	\$16,385,983
Federal Funds	\$14,467,843
TOTAL	\$45,604,378
FTE	207.16

*Numbers reflect limitation authority in DEQ's 2003-2005 Legislatively Approved Budget

2. The legal authority of the party(ies) to the agreement or plan to implement the formalized conservation effort, and the commitment to proceed with the conservation effort are described.

Legal Authority

Oregon's clean water laws are found in Chapter 468B of the Oregon Revised Statutes. These laws provide DEQ with the authority to implement federal Clean Water Act (CWA) requirements. CWA requirements are primarily concerned with water pollution that flows directly into surface water, with a few exceptions. In order to regulate wastewater that is discharged onto land or underground, the State has adopted laws and rules covering land-applied wastewater, septic systems and groundwater. The CWA also requires states to have nonpoint source management programs based upon assessments of the amounts and origins of nonpoint source water pollution in the state.

ORS 541.405, the state statute that establishes the Oregon Plan, includes DEQ's statutes in the list of state laws that are part of the comprehensive Oregon Plan effort.

Commitment to Proceed

DEQ's strong commitment to this conservation effort is demonstrated through its "Strategic Directions" – a strategic plan DEQ established in 2002 to sharpen the agency's focus on the priority actions needed to protect public health and the environment (attach?). Strategic Directions identify the four top priorities for the agency, and "Protect Oregon's Water" is one of those priorities. The description of this priority includes the following statement:

DEQ integrates water quality data, pollution limits, permitting and groundwater protection by focusing its efforts geographically in river basins as part of the Oregon Plan for Salmon and Watersheds.

Strategic Directions includes Key Actions and Performance Measures to track progress. On a regular basis, DEQ assesses the following measures to determine whether Oregon's water quality is improving:

- a. Percent of monitored streams with increasing and decreasing trends in water quality
- b. Percent of monitored stream sites with water quality in good to excellent condition
- c. Percent of wastewater permits issued within the target time period or less

Another indication of the agency's commitment is its participation in the Oregon Plan Monitoring effort in the Coastal Coho ESU. In addition to ongoing involvement in this effort, DEQ agreed to postpone other monitoring efforts and analyses in 2004 in order to devote time to the vigorous analysis of environmental data that went into the "effectiveness" analysis for this plan.

3. The legal procedural requirements (e.g. environmental review) necessary to implement the effort are described, and information is provided indicating that fulfillment of these requirements does not preclude commitment to the effort.

Legal Procedural Requirements

The primary responsibility of DEQ's Water Quality Program is to implement the elements of the Clean Water Act in Oregon where the CWA or the US EPA grants DEQ the authority to do so. Yet, even when DEQ has the authority to implement federal law, the US EPA still retains oversight responsibilities for certain aspects of DEQ's work.

The Clean Water Act gives certain authorities directly to states, such as the development of water quality standards and TMDLs, yet requires that EPA approve these state actions. EPA may also "delegate" certain authorities to states, such as wastewater permitting, yet EPA retains oversight and enforcement authority so they can step in if a state does not adequately implement CWA requirements. For example, EPA could issue a wastewater permit when a state fails to do so or does so in a manner that is not protective of water quality standards, deny (invalidate) a permit issued by the state or refuse to approve a state's newly adopted water quality standard or TMDL. In general, EPA is required to carry out the required activity if a state is prevented from doing so. For example, EPA might issue a valid permit where the state failed to do so or promulgate a water quality standard that the state must adopt.

Commitment to the Effort

DEQ's commitment to the conservation effort is demonstrated in a number of ways.

First, DEQ has pursued delegation of CWA programs even though delegation was not required. For example, DEQ sought and was delegated authority from EPA to implement the wastewater permitting program. If DEQ had not done so, EPA would be issuing permits in Oregon. The Water Quality program receives about 20% of its funding from EPA; the remainder comes from state General Fund revenues and permit fees. In spite of the cost, permittees and the Oregon State Legislature have indicated their continuing

commitment to having DEQ implement this program through their support for program funding. DEQ demonstrates its commitment by implementing the program in a manner that passes muster with EPA so that EPA continues to allow the state to retain delegation and receive federal grants to implement the program.

Second, DEQ is implementing certain CWA programs which would not otherwise be implemented. For example, DEQ issues Water Quality Certifications (aka Section 401 Certifications) for actions requiring a federal permit to ensure that those projects are done in a manner that will meet state water quality standards. DEQ also conducts water quality reviews on projects that require a state permit but do not require a federal permit from the Army Corps of Engineers.

Third, as described under question #2 above, DEQ has indicated its commitment to this conservation effort in its Strategic Directions plan.

4. Authorizations (e.g. permits, landowner permission) necessary to implement the conservation effort are identified, and a high level of certainty is provided that the party(ies) to the agreement or plan that will implement the effort will obtain these authorizations.

Authorizations

Access: Subject to Constitutional curtilage limitations, DEQ has statutory authority to inspect either an actual or suspected source of pollution or contamination or to ascertain compliance or noncompliance with any rule or standard or order or permit in the following areas: air quality, water quality, and on-site sewage (ORS 468.095); solid and hazardous waste (ORS 459.385); and underground storage tanks (ORS 466.805). In addition, most DEQ permits contain provisions conferring authority to access for inspection. If the permit does not contain that provision and access is denied, DEQ will obtain a warrant to access the land except: (1) for areas open to public access, (2) when an immediate response is necessary to protect public health or the environment, or (3) to gain access to an area outside the curtilage where access has not been denied, or where the inspector has an "objectively reasonable" belief that entry is permitted.

Federal Authorization: EPA authorizes or oversees many aspects of DEQ's water quality program:

- EPA must approve all water quality standards adopted into rule by the Environmental Quality Commission. All standards with the potential to impact Threatened & Endangered Species must undergo consultation with the Services before EPA can approve them. If EPA cannot approve Oregon's water quality standards, it must adopt standards for Oregon.
- EPA must approve all TMDLs that DEQ issues as an Agency Order. If EPA cannot approve a TMDL, it must develop the TMDL itself.
- EPA may prevent DEQ from issuing an NPDES permit that it objects to. If DEQ cannot adequately address EPA's objections, EPA must issue the permit itself.
- EPA may take enforcement actions for any Clean Water Act violations in Oregon if DEQ fails to take adequate action.

Certainty that Implementing Parties will Obtain Authorizations

DEQ maintains a close working relationship with EPA. DEQ invites and encourages EPA's involvement in the development of standards, TMDLs and permits, especially when any of those actions involve new or controversial issues, to ensure that the outcome meets with EPA's approval. DEQ is committed to effective implementation of the water quality program in Oregon so that EPA will not be required to do so. The Oregon State Legislature and permittees have repeatedly voiced their interest in having DEQ implement the water quality program in Oregon and have demonstrated this through their support for program funding.

5. The type and level of voluntary participation necessary to implement the conservation effort is identified, and a high level of certainty is provided that the party(ies) will implement the conservation effort will obtain that level of voluntary participation.

The Oregon Plan is carried out through a combination of voluntary and regulatory efforts. DEQ is primarily involved on the regulatory side, but there are two areas where DEQ interfaces with volunteers in ways that advance the objectives of the Oregon Plan. These include the Nonpoint Source Program and DEQ's support for volunteer monitoring efforts.

Nonpoint Source Program

Section 319 of the CWA requires states to develop a plan to address nonpoint source pollution. EPA approved DEQ's Nonpoint Source Management Program Plan in 1989. This plan is updated and re-approved every five years; the next update of DEQ's plan will be completed in 2005.

The overall goal of DEQ's Nonpoint Source (NPS) Program is the prevention or control of NPS pollution such that none of the beneficial uses of water is impaired by that pollution. The NPS program shares the mission of the Oregon Plan for Salmon and Watersheds – to restore Oregon's native fish populations- and the aquatic systems that support them – to productive and sustainable levels that will provide substantial environmental, cultural and economic benefits.

DEQ's strategy is to further develop its own and other agencies' or individual's capabilities in each of the ten program elements listed below, emphasizing watershed protection and enhancement, voluntary stewardship, and partnerships between all watershed stakeholders. DEQ uses the list as a guide for developing its surface water NPS program, for evaluating the programs and proposals of others, and for developing projects for funding through Section 319 of the Clean Water Act.

NPS Program Elements:

1. Standards: Defining the desirable and/or minimally acceptable conditions necessary to support sensitive beneficial uses (e.g., standards, criteria, or

- benchmarks for water quality, erosion, riparian condition, upland vegetation, or other watershed condition parameters).
2. **Assessment:** Condition assessment of the water specifically and of the watershed as a whole, focusing on the standards established above.
 3. **Coordinated Watershed Planning:** The joint and cooperative evaluation by all watershed stakeholders of needs, opportunities, constraints, and options for sound watershed management; the production of a practical and implementable action plan.
 4. **Education:** The delivery of information about watershed functions, values, conditions, responses, and management techniques; offered to land managers and the general public; intended to direct attitudes, beliefs, and actions toward improved watershed management practice.
 5. **Demonstration Projects:** Small-scale projects designed to demonstrate the viability of sound watershed management techniques.
 6. **Technical Assistance:** Provide assistance to help land managers select and implement best management practices suited to their ecoregion, land use, style of operation, and other management goals.
 7. **Financial Assistance:** Financial incentives (grants and loans) for implementation of watershed enhancement practices on private lands; coupled with contractual agreement by landowners to maintain the enhancements for an extended period.
 8. **Stewardship:** The adoption by local groups of responsibility for the condition of their watershed resources; active local promotion of the concept of watershed enhancement and the protection of sensitive beneficial uses.
 9. **Watershed Enhancement Projects:** Targeted enhancement and protection projects addressing watershed restoration priorities and other nonpoint source issues.
 10. **Enforcement:** The field-based capability to identify, investigate and remedy the violation of applicable standards or regulations.

Each year, DEQ awards grants for nonpoint source pollution control projects. The grant funds come from EPA's Section 319 grant program. In recent years, approximately \$2 million per year has been awarded statewide. Since 1997, over \$7.5 million has been awarded to fund over 150 nonpoint source pollution control projects in the coastal coho ESU.

Volunteer Monitoring Program

Since 1997, DEQ has employed a Volunteer Monitoring Specialist to provide technical assistance and equipment to watershed councils and other volunteer groups to support their water quality monitoring efforts. DEQ's Volunteer Monitoring Specialist assists these organizations in developing effective monitoring strategies, provides training in monitoring procedures and is responsible for collecting and reviewing data generated by volunteers with state purchased equipment.

Volunteer data is generated to address specific needs identified by the volunteer organization. Most commonly, volunteer organizations use these relatively dense, targeted, local sampling designs to develop a baseline understanding of their watershed and to identify areas of the watershed for restoration and landowner outreach. The

volunteer monitoring programs also serve as valuable education tools and help build participation in watershed groups.

In addition to using the data internally, watershed councils share their information with local decision makers. For example, lake temperature data collected in the Siletz sub-basin has played a role in defining potentially valuable coho rearing habitat in an area under heavy pressure from development. Many groups partner with local private or governmental land management organizations to help carry out their monitoring.

Volunteer organizations working within approved quality assurance project plans and collecting water quality data using equipment and supplies purchased by the DEQ's volunteer monitoring program have agreed to submit to DEQ the data they generate. If the data is of the appropriate quality, DEQ is able to use this data for developing the 303(d) list (a biennial list of waterbodies that do not meet water quality standards) and other purposes. In the Coastal ESU, DEQ has helped 13 of the 18 volunteer groups develop a monitoring plan. Twelve of these groups have submitted data to DEQ and of these, 10 groups have data of appropriate quality to be included in DEQ's long term database (LASAR).

For some North Coast TMDLs DEQ partnered with watershed council volunteers to fulfill TMDL development data needs. Similar cooperation and assistance has occurred in the South Coast and plans are underway for an extensive effort by multiple Mid Coast watershed councils and other groups. Volunteer groups in the Umpqua basin collected data used to provide background information in the development of a bacteria TMDL. Once a TMDL is completed in a watershed council's domain, these groups often seize the opportunity to conduct monitoring to determine effectiveness of TMDL-proposed best management practices and to collect data that can be used when the TMDL is reevaluated.

Given the history of participation, the strength of the watershed council network and the increasing awareness of water quality issues in communities throughout the ESU, DEQ is confident that volunteer groups will continue to be actively involved in monitoring activities. Their efforts will help ensure that the Oregon Plan is successfully implemented through an adaptive management approach.

6. Regulatory mechanisms (e.g., laws, regulation, ordinances) necessary to implement the conservation effort are in place.

Oregon's clean water laws are found in Chapter 468B of the Oregon Revised Statutes. These laws provide DEQ with the authority to implement federal CWA requirements. CWA requirements are primarily concerned with water pollution that flows directly into surface water, with a few exceptions. In order to regulate wastewater that is discharged onto land or underground, the state has adopted laws and rules covering land-applied wastewater, septic systems and groundwater. DEQ implements this authority through procedures codified in Oregon Administrative Rules.

DEQ monitors compliance through periodic facility inspections, review of discharge monitoring reports and response to complaints, and responds with enforcement actions when necessary. This approach, however, does not generate a meaningful assessment of the rate of compliance with water quality regulations. DEQ is currently developing an enforcement database that will allow more information on enforcement activity to be readily available in the future, such as the type of violation and when a Notice of Noncompliance escalates to an enforcement action.

7. A high level of certainty is provided that the party(ies) to the agreement or plan that will implement the conservation effort will obtain the necessary funding.

DEQ's budget for the Water Quality Program is shown below. Federal and General Funds are expected to stay fairly level, and Other Funds (fees) are generally increased to cover inflation and other increases in the cost of implementing the program.

	97-99*	99-01*	01-03*	03-05*	05-07**
General Fund	\$13,127,746	\$16,721,720	\$20,102,255	\$11,464,134	\$13,755,793
Lottery Fund	---	---	\$192,000	\$3,286,418	\$3,534,936
Other Funds	\$11,581,910	\$13,879,338	\$14,715,457	\$16,385,983	\$15,895,452
Federal Funds	\$7,828,845	\$11,320,803	\$12,481,551	\$14,467,843	\$14,170,091
TOTAL	\$32,538,501	\$41,921,861	\$47,491,263	\$45,604,378	\$47,356,272
FTE	204.44	230.95	235.28	207.16	201.40

*Numbers reflect spending authority in DEQ's Legislatively Approved Budget

**Numbers reflect spending authority in the Governor's Recommended Budget

A portion of the federal fund monies are awarded as grants for nonpoint source pollution control projects. The grant funds come from EPA's Section 319 grant program. In recent years, approximately \$2 million per year has been awarded statewide. Since 1997, over \$7.5 million has been awarded to fund over 150 nonpoint source pollution control projects in the ESU.

In addition, DEQ manages the Clean Water State Revolving Loan Fund which provides low-cost loans to public agencies for the planning, design and construction of point source and non-point source pollution control projects. Since 1997, DEQ has loaned more than \$20 million to municipalities in the ESU to help finance improvements or expansions of sewage treatment plants.

Note: During the 2001-2003 biennium DEQ was one of many state agencies required to cut positions due to reductions in General Funds, precipitated in large part by the economic downturn. The most significant effects for the water quality program were felt in TMDL development and water quality monitoring. In the TMDL program, the cuts have resulted in a delay in the schedule for completing TMDLs throughout the state. The original schedule set in 1997 would have completed TMDLs statewide by 2007. The cuts

have caused that timeline to be extended to 2010. In the Coastal Coho ESU, the remaining TMDLs will all be completed by 2008.

The cuts also contributed to a reduction in the number and/or frequency of stream sites being monitored throughout the state in 2005 and 2006 (both ambient and Oregon Plan monitoring sites).^{*} Although monitoring of the ambient sites in the Coastal Coho ESU have not been affected, the Oregon Plan monitoring (i.e., probabilistic survey sites) in the ESU was reduced from 41 sites in 2003 to 9 sites in 2004 and 2005. The number and frequency of sites in the ESU that will be monitored in the future will be determined as part of DEQ's statewide monitoring strategy, described below.

DEQ is currently revising its statewide water quality monitoring strategy and expects to be implementing the new strategy in 2006. There are several drivers prompting the need to undertake this revision, including (1) the budget cuts and resulting inability to continue to implement the statewide monitoring plan in the same manner as before, (2) EPA's expectations for states to have a comprehensive plan addressing specific requirements, (3) DEQ's shift to a watershed approach and a need to align its monitoring strategy to support that approach, and (4) the Oregon Plan Monitoring Team's effort to expand monitoring beyond the Coastal Coho, SONCC and Willamette ESUs to cover the whole state. The goal of this revision is to best use the limited monitoring resources to collect the information necessary to answer the key questions about water quality and watershed health throughout the state. All of these activities, i.e., the coho assessment, the development and implementation of the statewide monitoring plan and the development and application of the analytical tools, directly support the Oregon Plan's adaptive management effort in the ESU as well as throughout the state.

**Another factor contributing to the reduction in sampling in the ESU was the need to dedicate resources to the development of this report. This effort included data analysis and report generation as well as finalizing the development of analytical tools for impairment and stressor identification using biological indicators.*

8. An implementation schedule (including incremental completion dates) for the conservation effort is provided.

DEQ maintains a schedule for completing TMDLs throughout the state and for reissuing NPDES permits to incorporate updated permit conditions. In most instances, DEQ will reissue NPDES permits for an entire basin at one time. Here is the schedule for completing TMDLs and reissuing permits for basins within the ESU.

Basin or Subbasin	TMDL	Reissue Permits
N. Coast (inc. Nehalem & Necanicum subbasins)	Done	2006
Nestucca	Done	2006
Tillamook	Done	2006
Umpqua	2005	2005
Alsea	2008	2005

Siletz-Yaquina	2008	2005
Siuslaw	2008	2005
Sixes	2006	2007
Coos	2006	2006
Coquille	2006	2006

TMDLs include a Water Quality Management Plan (WQMP) that identifies the management strategies necessary to achieve pollution reduction goals. WQMPs also identify the sector and source-specific TMDL Implementation Plans required and those responsible for developing and revising those plans. Pollution controls on state, private and some federal lands forestlands are addressed under the Oregon Forest Practices Act or alternatively through voluntary approaches, especially when dealing with legacy issues. Pollution controls related to agricultural activities are addressed by the Oregon Department of Agriculture under the Senate Bill 1010 program. Federal land managers (BLM and USFS) develop and implement Water Quality Restoration Plans to address the TMDL as described in a Memorandum of Agreement or Memorandum of Understanding between the agency and DEQ.

DEQ's TMDL rules (OAR 340-042-0025 – 340-042-0080) require Designated Management Agencies (DMAs) other than ODF and ODA to prepare an implementation plan and submit the plan to the Department for review and approval according to the schedule specified in the WQMP. DEQ's policy is to require implementation plans within 12-18 months of the issuance of a TMDL as an Agency Order. TMDL Implementation Plans must:

- (a) identify the management strategies the DMA or other responsible person will use to achieve load allocations and reduce pollutant loading;
- (b) provide a timeline for implementation management strategies and a schedule for completing measurable milestones; and
- (c) provide for a performance monitoring plan for periodic review and revision of the implementation plan.

The TMDL rules require DMAs to implement and revise the Implementation Plan as needed. For sources regulated under a DEQ NPDES permit, pollutant limits and other management strategies will be incorporated into permit requirements as necessary.

Section B – Effectiveness of Conservation Activities

1. The nature and extent of threats being addressed by the conservation effort are described, and how the conservation effort reduces the threats is described.

**THE RESPONSE TO THE FIRST PART OF THIS QUESTION
IS ATTACHED AS A SEPARATE DOCUMENT (See Section B-1, page 24)**

How the conservation effort reduces the threats:

DEQ has responsibilities for protecting Oregon's waters from point source and nonpoint source pollution and restoring Oregon's waters when water quality standards are not being met. The general framework for this program is (1) identify water quality goals (standards), (2) prevent pollution and protect water quality by administering permits and various technical and financial assistance programs, (3) monitor and assess water quality, and (4) implement and oversee efforts needed to restore water quality when standards are not being met. This comprehensive approach ensures that water quality Factors for Decline will be addressed when they present a threat to listed species.

DEQ carries out its responsibilities through a variety of programs and activities that are briefly described below.

Water Quality Standards: DEQ establishes water quality standards to protect beneficial uses of the State's waters, such as fish and aquatic life, recreation, irrigation and domestic water supply. The standards are established at the levels needed to protect the most sensitive beneficial uses. For example, cold water species such as salmonids are generally the most sensitive to water temperature, so the temperature standard is established based on the need to protect salmonid spawning, rearing and migration. Here is the status of the water quality standards identified as Factors for Decline:

Temperature - revised in 2003 and approved by EPA in 2004 after consultation with NOAA Fisheries. Some additional refinements are expected in 2005.

pH – established in 1996.

Dissolved Oxygen - revised in 2003 and approved by EPA in 2004 after consultation with NOAA Fisheries.

Nutrients – DEQ does not feel it is necessary to establish a nutrient standard because other effective mechanisms for addressing nutrients are already in place. For example, nutrients may adversely affect beneficial uses when they cause conditions, through eutrophication, that result in violations of water quality standards such as DO or pH. When this occurs, DEQ establishes nutrient controls through basin-specific analyses and implementation plans called Total Maximum Daily Loads (TMDLs). This is the approach being taken in the Tenmile Lakes TMDL currently under development.

Sediments – DEQ has a narrative standard for sediment but has not established numeric criteria. However, DEQ has adopted an Intergravel Dissolved Oxygen (IGDO) standard and recently revised this standard to maintain 8 mg/l in salmon redds. In basins where sedimentation is a problem, DEQ will control sediments through a basin-specific TMDL (for example, see the Nestucca TMDL at <http://www.deq.state.or.us/wq/TMDLs/Nestucca/NestuccaBayTMDL-WQMP.pdf>) or other more effective approach. In addition, most temperature TMDLs also support sediment controls through the promotion of increased stream vegetation to address solar loading which also reduces sediment loading to stream channels by stabilizing stream banks.

Toxics – In May 2004, the Environmental Quality Commission adopted rules, with an effective date of 2/15/05, that revise over 250 water quality criteria for toxics. The criteria were submitted to EPA for approval but, as of April 12, 2005, EPA has not yet made a determination on the criteria due in part to the requirement to consult with USFWS and/or NOAA Fisheries for the criteria known to affect listed species. However, because the effective date for the rule has passed, DEQ is implementing the new criteria in those instances where the Clean Water Act allows for states to regulate under state law provisions and where the criteria are more stringent than federal criteria.

More information on DEQ's water quality standards program can be found at: <http://www.deq.state.or.us/wq/standards/wqstdshome.htm>

Point Source Permits: DEQ issues and enforces point source permits under its delegated Clean Water Act authorities to ensure that the wastewater discharges into waters of the state do not cause a violation of water quality standards. The permits set limits for the discharge of pollutants from each source. DEQ also implements state laws that protect groundwater quality by requiring permits for installing subsurface sewage disposal systems (septic systems) and for the application of wastewaters to land. DEQ periodically inspects permitted facilities to ensure compliance and responds promptly to incidents of non-compliance. More information on DEQ's permit program can be found at: <http://www.deq.state.or.us/wq/wqpermit/wqpermit.htm>

In 2002, concerns related to the effectiveness of DEQ's wastewater permitting program led the Department to convene a diverse group of business, municipal, consulting, environmental, and community interest representatives to suggest ways to enhance the program. From December 2002 to July 2004, the "Blue Ribbon Committee" conducted an in-depth review of the program, discussed issues and concerns related to permit issuance and compliance, and identified specific program activities and actions needed to strengthen these critical functions. Key areas of concern included the backlog of major National Pollutant Discharge Elimination System (NPDES) permit renewal applications, the growing complexity of NPDES permit regulations, the increasing number of sources subject to NPDES permit requirements, and serious resource constraints. The Committee recommended a number of programmatic, administrative and budget/legislative changes to address the issues. DEQ has already acted (or is working quickly) to address several of these concerns (e.g., reducing the NPDES major permit application backlog and making

permit status information publicly available), and is currently seeking legislative support for statutory changes and additional funding for recommended program reforms. The Committee's report can be viewed at <http://www.deq.state.or.us/wq/wqpermit/BlueRibbonRpt080604.pdf>

Nonpoint Sources: DEQ protects Oregon's waters from nonpoint source pollution by providing technical assistance and financial incentives for nonpoint source pollution control activities. The program is guided by a 5-year plan that DEQ develops and EPA approves. The plan encompasses the elements described under section A.5 of this report. This program focuses on working with a variety of partners in both regulatory and voluntary cooperative activities. DEQ's partnership with local entities and associations has facilitated fruitful and productive relationships with private landowners and other land managers and leveraged additional resources to address nonpoint source problems. For example, DEQ's nonpoint source grants (Section 319 grants) require a 40% local match. In addition, the framework for nonpoint source protection at the local level that DEQ has helped to create has enabled watershed councils and other groups to secure additional state and federal funding for watershed enhancement projects. All of these activities increase awareness and understanding of the importance of watershed protection and prompt more citizens to voluntarily contribute to the cause, which will ultimately contribute to broad scale watershed improvements. More information on DEQ's nonpoint source program can be found at:

<http://www.deq.state.or.us/wq/nonpoint/nonpoint.htm>

Water Quality Monitoring: DEQ implements two primary monitoring programs that assess the status and trends of the water quality: a statewide ambient monitoring program focused on large rivers and a network of randomly selected sites on wadeable streams (1st through 3rd order). These are described in more detail in Section B-1 of this report. DEQ also collects water quality data through a variety of special studies, such as those needed for developing TMDLs and permits. Every two years (as required by EPA under Section 303(d) of the Clean Water Act), DEQ prepares a report of statewide water quality conditions and identifies water bodies that are not meeting water quality standards. DEQ uses water quality data to identify water quality problems and design appropriate responses to resolve those problems. DEQ is also beginning to make more use of biological data to provide an integrated assessment of aquatic conditions and to identify the stressors that may be contributing to impairments. More information on DEQ's water quality monitoring program can be found at:

<http://www.deq.state.or.us/lab/wqm/watershed.htm>

Total Maximum Daily Loads: Waterbodies that are identified through the 303(d) process described above as being impaired are addressed through the development and implementation of a Total Maximum Daily Load (TMDL). A TMDL is a determination of the total amount of a pollutant the waterbody can assimilate and still meet water quality standards. The TMDL allocates the pollutant load among point sources, nonpoint sources, background levels, reserve capacity and a margin of safety. This information is used to guide TMDL implementation efforts. More information on DEQ's TMDL program, as well as links to completed TMDLs, can be found on DEQ's website at <http://www.deq.state.or.us/wq/TMDLs/TMDLs.htm>.

TMDL Implementation: Once water quality problems are “diagnosed” through the TMDL, pollutant reductions are addressed in a variety of ways.

- DEQ revises point source permits if necessary to reduce the pollutant load arising from point source discharges.
- The Oregon Department of Agriculture works with local stakeholders to develop and implement Agricultural Water Quality Management Area Plans (AWQMAPs) to address the pollutant reductions required by the TMDL.
- Pollution controls on state, private and some federal lands forestlands are addressed under the Oregon Forest Practices Act or alternatively through voluntary approaches, especially when dealing with legacy issues. Federal land managers (BLM and USFS) develop and implement Water Quality Restoration Plans to address the TMDL as described in a Memorandum of Agreement or Memorandum of Understanding between the agency and DEQ.
- Municipalities address pollution carried into waterways by storm water runoff either through their NPDES Storm Water permit or through implementing a TMDL Implementation Plan that they are required to develop and submit to DEQ within 12-18 months of completion of a TMDL.
- DEQ assists those responsible for implementing TMDLs through targeted financial assistance (nonpoint source grants and Clean Water State Revolving Fund loans) and technical assistance (e.g. participation on committees convened to review and revise AWQMAPs or develop other watershed restoration plans; consultations with watershed councils and land owners on the design of restoration projects; assisting small communities with the development of TMDL Implementation plans and identification of effective strategies).

Indicators of Effectiveness

Water quality improvements in an area like the coastal coho ESU – where the problems largely relate to nonpoint source pollution and flow and channel modification – take time. At this time, we are not able to demonstrate an improving trend in water quality, but there are some indications that improvements will occur. One sign of progress is reflected in the on-the-ground efforts of landowners and others and the partnerships being forged to conduct TMDL implementation activities. Another indication is found in the analysis of data from the Oregon Water Quality Index for watersheds where TMDLs have been in place for a longer period of time. These efforts are described below.

TMDL Implementation Activities in the Coastal Coho ESU

To date, four TMDLs have been developed within the Coastal Coho ESU. These are the Nestucca, Tillamook, Nehalem, and North Coast Basins. DEQ has also completed TMDLs for the Lower Columbia Basins (Youngs and Claskanie). The major water quality problems identified were stream temperature, bacteria, and sediment.

Each TMDL includes a Water Quality Management Plans (WQMP) that identifies specific actions needed to abate the aforementioned water quality problems and those responsible for implementing them. Highlights of TMDL implementation efforts in this area include:

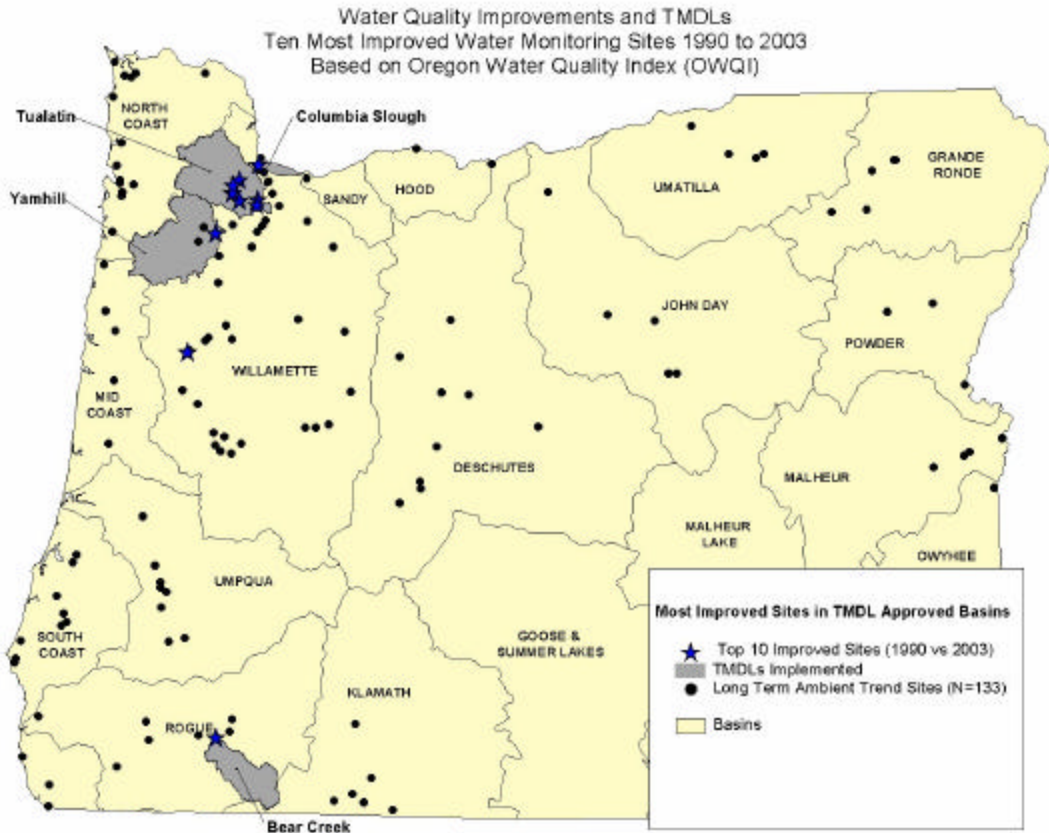
- DEQ works in partnership with the Oregon Department of Agriculture (ODA), local Soil & Water Conservation Districts (SWCDs), watershed councils, Tillamook Estuaries Partnership (TEP), Tillamook County Creamery Association (TCCA), the Oregon Watershed Enhancement Board (OWEB) and others on an aggressive riparian restoration program that includes livestock exclusion, off-channel watering facilities, riparian planting, and barb placement to narrow and deepen river channels. As of November 2004, the effort has resulted in approximately 200 miles of riparian fencing, 250 miles of riparian plantings, and 6 channel barbs to narrow river channels.
- DEQ works in partnership with watershed councils, TEP, Tillamook County SWCD and others to restore riparian areas on non-agricultural rural residential lands. As of November 2004, approximately 50 miles of streams and rivers have had riparian planting treatments.
- DEQ works with watershed councils, the Oregon Department of Forestry (ODF), US Forest Service (USFS), Bureau of Land Management (BLM), private timber companies, and small woodlot owners to develop, implement and/or monitor water quality protection projects on forest lands.
- DEQ has worked together with SWCDs, watershed councils and private landowners to replace 20 culverts and 10 tidegates. Through the TEP, the partnership also successfully negotiated and purchased 350 acres of wetlands in the lower Wilson/Kilchis Rivers area. The wetland will, when restored, filter bacteria, sediment, and nutrients now entering Tillamook Bay from agriculture and urban areas.
- DEQ has joined with ODA, TEP, TCCA, Oregon State University Extension Service and others to establish a two year buffer strip effectiveness study to determine the most effective buffer width and type needed to abate runoff from agriculture lands.
- DEQ coordinated efforts by the TEP and Tillamook County to inform and educate private landowners about on-site septic system maintenance and replacement. Efforts to date have included an information mailing to all on-site septic users and a voluntary program to inspect systems that may be failing. To date, approximately 8% of the systems have been inspected.
- North Coast TMDLs have identified urban stormwater runoff as a major area of concern. DEQ worked in conjunction with the Oregon Economic and Community Development Department (OECDD) to inform local jurisdictions about stormwater concerns and form partnerships to address the problems. As of November 2004 the cities of Bay City and Tillamook have completed Stormwater Master Plans and the City of Wheeler has begun a study. It is anticipated that all cities and municipalities in

the North Coast and Lower Columbia basins will have completed these plans within five years.

- DEQ worked with and provided grant funds to the Port of Garibaldi to contain all of their surface runoff from the main port area, including a small hardwood processing plant. DEQ is currently working with local governments, the OSU Coastal Rainstorming Project and other local partners to fund and implement BMPs necessary to abate the problems identified.

Water Quality Improvements in TMDL Basins

DEQ used water quality information from the Oregon Water Quality Index (see Section B.1 for a description of this index) to look at water quality trends in basins where TMDLs have been developed and implemented. In general, water quality has improved across the state since the late 1980s. The map below shows the 10 OWQI monitoring sites that have shown the greatest improvements in water quality between 1990 and 2003. Nine out of ten of these sites are in watersheds where TMDLs have been implemented. While it is not possible to definitively determine the causes of the improvements, the information suggests that TMDLs are a contributor to this trend.



Water Quality Issues Raised in NOAA’s 4/24/97 Evaluation of the OCSRI

NOAA summarized Oregon’s general strategy for addressing water quality Factors for Decline as (1) identify impaired waters; (2) bring impaired waters up to standards; (3) prevent degradation of unimpaired waters; and (4) review the standards triennially and revise as necessary. In its review, NOAA had some concerns that certain objectives had a low or moderate likelihood for success. These concerns are captured and addressed below.

Concern Raised by NOAA in 1997	Current Status
<p>Gaps in Water Quality Assessment: Practical constraints (costs) and lack of comprehensive monitoring strategy raise questions about the feasibility of assessing a high percentage of coastal streams.</p>	<p>A variety of monitoring activities are in place to assess and track conditions in the ESU:</p> <ul style="list-style-type: none"> • The Oregon Plan monitoring strategy – This is a multi-agency plan designed to assess coho, stream habitat, and water quality across the ESU. While limited to wadeable streams, it allows evaluation across the entire ESU and coordinates data from multiple agencies. (Note: Budget cuts to DEQ’s monitoring program during the 2001-2003 biennium (see discussion under Section A.1 of this report) have contributed to a reduced monitoring effort in the ESU for 2004 and 2005. DEQ is currently revising its statewide monitoring strategy to chart a course for addressing monitoring needs throughout the state in the future. • Volunteer monitoring – Many watershed councils in the ESU have monitoring programs that assess baseline conditions and restoration effectiveness. • TMDLs – When TMDLs are developed extensive data collection occurs. In addition water quality targets are set and water quality management plans developed to achieve the targets. <p>However, the monitoring effort would benefit from increases in toxics monitoring and effectiveness monitoring.</p>
<p>SB 1010: Lack of specific state standards, funding uncertainties, and uncertainty with regard to timelines, ability to assess effectiveness, technical proficiency, quantified objectives, effectiveness of measures to achieve objectives and adequate implementation and enforcement.</p>	<ul style="list-style-type: none"> • By June of 2004, ODA adopted Agricultural Water Quality Management plans and rules for all 39 planning areas in the states. These plans and rules provide the foundation for an implementation strategy and enforceable rules to address water pollution caused by agricultural activities. • The state has funded both the outreach and compliance aspects of this program since 1997. Effectiveness of this program is being evaluated through analysis of data collected by other state and federal agencies, as well as data collected by the agency to complement information collected by others. In particular, ODA has initiated a riparian aerial assessment strategy that will evaluate a portion of each basin’s agricultural waterways every four to five years to evaluate the effectiveness of this program to address riparian vegetation issues associated with streambank

	<p>stability and shade.</p> <ul style="list-style-type: none"> • Through coordination with the agricultural partnership (USDA Natural Resources Conservation Service, USDA Farm Services Agencies, OSU Extension Service, and Soil and Water Conservation Districts) and other ODA programs (Confined Animal Feeding Operations, Pesticide, Weeds and Invasive Species programs), the state has the means to achieve water quality objectives which contributes to establishing and improving the habitat for anadromous fish along streams next to agricultural lands.
<p>CAFO Program: State lacks adequate authority for certain facilities; no explicit compliance and effectiveness monitoring and enforcement programs; questions about ability of 6217 program and SB502 (ORS 561.191) to prohibit agricultural practices that would degrade existing high quality waters.</p>	<ul style="list-style-type: none"> • ODA Confined Animal Feeding Operation (CAFO) Program (Oregon Revised Statute 468B.050 and 468 B.0125) was modified by the state legislature in 2001 to expand the universe of CAFO's that must have a permit in order to bring the program into compliance with EPA's CAFO regulations. • In 1998, ODA shifted from a complaint response system of inspections to a routine annual inspection program for all permitted CAFOs. Staffing has been increased and located regionally to conduct annual inspections. ODA uses information from these inspections to monitor compliance and determine program effectiveness. • Agricultural practices that would degrade existing high quality waters are addressed through CAFO permits, which allow no discharge, and rules adopted under the SB 1010 program. In each basin where SB1010 rules have been adopted, landowners are required to allow for the establishment and maintenance of riparian vegetation for shade and streambank stability. This provides a regulatory backstop for improving degraded sites and maintaining sites in good condition.
<p>Coastal Nonpoint Program (CZMA Section 6217): Uncertainty regarding implementation of Goal 5 and the will to promulgate adequate regulatory mechanisms (e.g., enforceable policies to control nonpoint pollution from agriculture, forestry, urban development, marinas, hydromodification and channelization).</p>	<p>DEQ has been working through various issues with EPA and expects to have its 6217 program approved in the near future. Issues such as the ones described here have been addressed and/or DEQ has described its "fall back" legal authority should existing regulatory or voluntary measures prove ineffective.</p>
<p>Forest Practices Act: Adequacy of riparian buffers requirements</p>	<p>ODF/DEQ's 2002 Sufficiency Analysis of the FPA rules concluded with regard to meeting water quality standards that "there is some risk current protection may not be sufficient at a site-specific scale for some small and medium streams, however, the significance and scope of this risk is uncertain." Since that time, DEQ and ODF have worked</p>

	<p>together to evaluate changes that could improve the ability of forest practices (through rule or voluntary means) to meet water quality standards. The Board of Forestry and Environmental Quality Commission at a joint Fall 2004 meeting directed DEQ and ODF to continue to work together to assess the sufficiency of, and develop options for, forest practices that will appropriately meet water quality standards .</p>
<p>Implementation of Antidegradation Policy: No well-developed program to implement the policy on nonpoint sources, exceptions allowed.</p>	<p>No changes to report.</p>
<p>Ensuring Water Quality Standards are Adequately Protective: NOAA identifies a number of concerns related to the temperature standard, and makes the general statement that the review and revision of standards in consultation with EPA and NOAA would create a high likelihood that the standards would protect beneficial uses – except toxics which are not commonly monitored.</p>	<p>EPA is required to consult with the NOAA Fisheries and/or USFWS when approving water quality standards of concern to listed species. EPA has approved Oregon's temperature and dissolved oxygen standards in consultation with NOAA. In addition, EPA has approved Oregon's Intergravel Dissolved Oxygen criterion that was revised per NOAA's request.</p> <p>DEQ has recently revised numerous water quality standards for toxics which are currently undergoing EPA review and consultation with the Services.</p> <p>While there is a high likelihood that other nonpoint source control practices (e.g., storm water management, restoration of riparian buffers) will help reduce toxic loading, additional toxics monitoring is warranted, especially in response to recent studies drawing links between toxic pollutants and negative physiological and behavioral responses from salmonids.</p>
<p>Biological Conditions: OCSRI biological objectives would be stronger if worded to describe the way in which simplified and otherwise altered biological community structure detrimentally affects salmonids, rather than describing the physical perturbations that can alter biological conditions.</p>	<p>The health of biological communities (fish & macroinvertebrates) may directly affect instream salmonid condition. The introduction of alien fish species for example lowers the Index of Biotic Integrity (IBI) score and can have a direct affect on juvenile coho. Macroinvertebrate communities are another indicator of biological health and are a principle food for juvenile salmonids. When compared to observed juvenile coho abundance data, the fish IBI and macroinvertebrate index scores were both moderately correlated with coho ($r^2 = 0.42$ & 0.35, respectively). Because these biological indices are largely unaffected by conditions outside the local freshwater stream environment, unlike coho, they provide a more direct indication of current freshwater conditions and over time indicate the effectiveness of management actions.</p>
<p>Stream Fertility: No reference to nutrient standard; possibly an oversight because implementation of this standard would appear to be most germane measure; most waterbodies have no designated</p>	<p>DEQ does not feel it is necessary to establish a nutrient standard because other effective mechanisms for addressing excessive nutrients are already in place. For example, nutrients may</p>

<p>criteria; standard should include default phosphorus concentration; nitrogen and potassium also important but not in standard</p>	<p>adversely affect beneficial uses when they cause conditions, through eutrophication, that result in violations of water quality standards such as DO or pH. When this occurs, DEQ establishes nutrient controls through basin-specific TMDLs. Conversely, in streams where nutrient levels are thought to be inadequate to support primary productivity, DEQ works in cooperation with ODFW to add nutrients (fish carcasses) to streams to aid salmon runs.</p>
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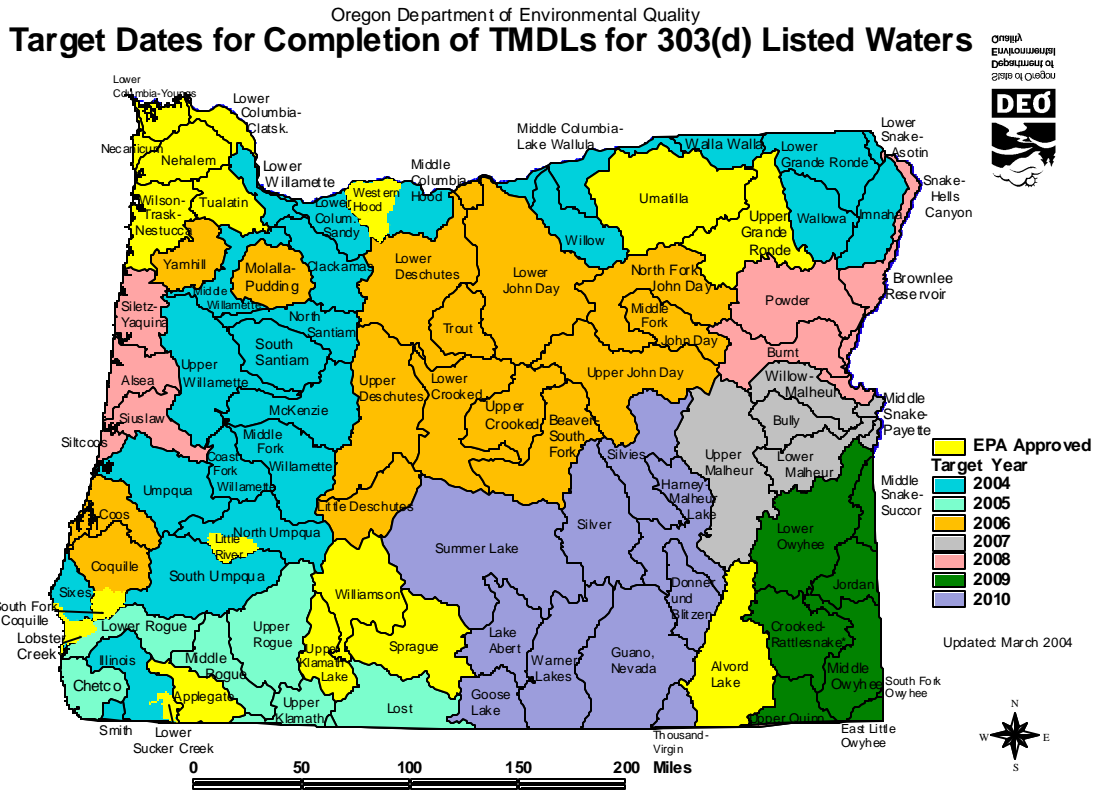
2. *Explicit incremental objectives for the conservation effort and dates for achieving them are stated.*

DEQ uses a variety of methods for setting and tracking incremental water quality objectives, including a schedule for developing TMDLs and benchmarks for water quality trends.

Oregon’s TMDL schedule is shown on the map below. Oregon’s 303(d) list and TMDL process was the subject of lawsuits brought by environmental groups in the 1990s. Under a consent decree signed in 2000, EPA has agreed to a timeline that will ensure Oregon will complete all applicable TMDLs for waterbodies listed on the 1998 303(d) list (1,153 TMDLs) by the end of 2010. This schedule is further memorialized in a Memorandum of Agreement between DEQ and EPA. The schedule sets interim benchmarks for completing the TMDLs by 2010. DEQ has included this schedule in its collection of agency performance measures. The table below shows that, as of 2003, DEQ had surpassed the TMDL target for 2004.

Performance Measure	Year	2003	2004	2007	2010
Cumulative percentage of waterbody segments with approved TMDL according to the 2000 EPA consent decree	Target	NA	27%	71%	100%
	Data	34%			

(DEQ Annual Performance Report for Fiscal Year 2003-2004)



DEQ also reports annually on the Oregon Benchmark shown below. This data is drawn from the Oregon Water Quality Index.

Benchmark	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2005	2010
Percentage of monitored stream sites with significantly increasing trends in water quality	8%	21%	32%	52%	70%	64%	70%	51%	37%	32%	75%	75%
Percentage of monitored stream sites with significantly decreasing trends in water quality	20%	8%	2%	0%	1%	1%	1%	5%	4%	6%	0%	0%
Percentage of monitored stream sites with good to excellent water quality condition	27%	28%	35%	32%	37%	41%	42%	46%	46%	48%	40%	45%

3. The steps necessary to implement the conservation effort are identified in detail.

DEQ’s water quality program is implemented according to rule, policy and internal management directives. Links to many of these documents can be found on DEQ’s website at <http://www.deq.state.or.us/wq/>

One program activity that is a vital element of the conservation effort – TMDL implementation – is described in DEQ’s TMDL rule which can be viewed at:

<http://www.deq.state.or.us/wq/wgrules/340Div42.pdf>. The rules describe requirements for developing, implementing, monitoring and revising TMDL implementation plans. DEQ is currently drafting detailed guidelines and developing tools to support TMDL Implementation efforts.

4. Quantifiable, scientifically valid parameters that will demonstrate achievement of objectives, and standards for these parameters by which progress will be measured, are identified.

Water quality objectives are achieved when Oregon's water quality standards are met. The status of water quality standards identified as Factors for Decline is described above under section B.1. Background information about Oregon's water quality standards can be found at: <http://www.deq.state.or.us/wq/standards/wqstdshome.htm>, and the standards themselves can be found at <http://www.deq.state.or.us/wq/wgrules/wgrules.htm#Div41>. Progress toward achieving water quality goals is determined through monitoring and analysis, as described below.

5. Provisions for monitoring and reporting progress on implementation (based on compliance with the implementation schedule) and effectiveness (based on evaluation of quantifiable parameters) of the conservation effort are provided.

From the big picture perspective, DEQ maintains schedules for developing TMDLs and updating water quality permits. These schedules can be used for monitoring progress on implementing key water quality programs.

As for effectiveness monitoring, DEQ reports in a general manner on the effectiveness of water quality protection efforts through its 305(b) report on the status of water quality statewide. States are required by the Clean Water Act to produce this report every two years.

At another level, evaluations of water quality conditions such as the one included in this report provide a more focused assessment of the effectiveness of water quality protection efforts. It is anticipated that this sort of evaluation would be repeated periodically to gauge progress and provide feedback to support the adaptive management approach.

Implementation and effectiveness monitoring will also occur at a much finer level through TMDL Implementation efforts. In the TMDL Implementation Guidelines currently under development, DEQ is proposing to require Designated Management Agencies in basins where TMDLs have been completed to report annually on TMDL implementation efforts, and to require certain DMAs to do effectiveness monitoring as well. In certain basins, groups of stakeholders are working together to design and implement a more comprehensive effectiveness monitoring strategy. DEQ is just beginning to implement these requirements and addressing issues related to oversight and data management.

6. Principles of adaptive management are incorporated.

The Clean Water Act incorporates the principles of adaptive management by requiring periodic assessment of water quality (i.e., 303(d) list) and requiring the development of water quality improvements plans (i.e., TMDLS) when impairments are found. DEQ carries out these requirements and plans to revisit the TMDLs every 5-10 years when new information suggests changes may be needed.

To ensure water quality improvements occur, DEQ has adopted rules enabling the agency to enforce TMDL implementation requirements. These rules also incorporate principles of adaptive management. The rules require federal land managers and municipalities to develop, implement, monitor and revise TMDL implementation plans as necessary to reduce pollutant loading. The rules also describe how pollution controls on state and private forest land will be addressed under the Oregon Forest Practices Act and controls related to agricultural activities will be addressed per the requirements of Senate Bill 1010 and associated rules. Some uncertainties remain as to the amount of effectiveness monitoring that will be required, the resources available to do that monitoring, and how that data will be managed. However DEQ is reviewing its monitoring program to make more strategic use of its monitoring resources to address effectiveness monitoring needs.